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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,071	07/19/2004	Dennis W. Prather	131*288	2021
23416	7590	02/08/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			PETKOVSEK, DANIEL J	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/502,071

Applicant(s)

PRATHER ET AL.

Examiner

Daniel J. Petkovsek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on application filed July 19, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/19/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is in response to the application filed July 19, 2004. Claims 1-28 are pending.

This application is a 371 of PCT/US03/01384, filed January 17, 2003, which claims benefit of 60/350,749, filed January 22, 2002.

#### ***Information Disclosure Statement***

1. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on July 19, 2004, have been considered and made of record (note attached copy of forms PTO-1449).

#### ***Drawings***

2. The drawings filed July 19, 2004 are acknowledged.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Cotteverte et al. U.S.P. No. 6,542,682 B2.

Cotteverte et al. U.S.P. No. 6,542,682 B2 teaches (Figs. 22, 28-31; column 11, lines 5-39; column 14, line 9 through column 15, line 64) an electro-optic switch (and inherent method of using same) comprising: a planar photonic crystal structure having 1<sup>st</sup> and 2<sup>nd</sup> waveguides (210 &

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220), wherein the 1<sup>st</sup> waveguide 210 is adjacent to the 2<sup>nd</sup> waveguide 220 along a coupling length, and a change in conductance (due to electro-optic actuation) along the coupling length provides an electro-optic switching function between the 1<sup>st</sup> and 2<sup>nd</sup> waveguide, which clearly, fully meets Applicant's claimed limitations.

Regarding independent claims 8 and 15, the photonic crystal waveguide structure has a photonic bandgap (column 2, lines 41-43 et al.).

Regarding claims 2, 3, 9, 10, 16, 17, 23, and 24, the photonic crystal can be arranged in either a square or hexagonal lattice (see column 7, lines 34-36).

Regarding claims 4-7, 11-14, 18-21, and 25-28, the propagation constants of the 1<sup>st</sup> and 2<sup>nd</sup> waveguides are equivalent and couple to each other all optical wavelengths in the *symmetrical* arrangements as shown in Figs. 22, and 28-31.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: PTO-892 form reference A (update to U.S. Patent document to Yamada).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Petkovsek  
February 3, 2006



AKM ENAYET ULLAH  
PRIMARY EXAMINER